Package util.xml.objectstream

Interface Summary

SerializedObjectImporter - An interface that imports a serialized object.

XMLSerializer - An interface that performs XML serialization and deserialization of arbitrary Java objects.

Class Summary

DefaultXMLSerializer - A class that performs XML serialization and deserialization of arbitrary Java objects.

SerializedObject - A class that represents a serialized object.

ArrayObject - A class that represents a serialized array object.

PrimitiveObject - A class that represents a serialized primitive object.

SpecialObject - A class that represents a serialized special object.

UserClass - A class that represents a serialized user class.

UserObject - A class that represents a serialized user object.

XMLObjectInputStream - A class that reads an XML input stream to deserialize an object from an XML element which represents the object.

XMLObjectOutputStream - A class that writes a serialized object to an XML output stream using an XML element which represents the object.

Exception Summary

XMLObjectStreamException - A class that represents XML object stream exceptions.

Package util.xml.stream

Class Summary

XMLInputStream - A class that reads an XML input stream to create an XML element which encapsulates the XML data.

XMLOutputStream - A class that writes an XML output stream using the encapsulated XML data stored in an XML element.

XMLElement - A class that represents an XML element.

Interface *SerializedObjectImporter*

public interface SerializedObjectImporter
An interface that imports a serialized object.

Method Summary
void customObjectImport(Object serialHandle, UserObject userObject)
      Imports a serialized object into this object.

Interface *XMLSerializer*

All Known Implementing Classes: DefaultXMLSerializer

public interface XMLSerializer
An interface that performs XML serialization and deserialization of arbitrary Java objects.

Method Summary
XMLElement serialize(Object object)
      This function performs the XML serialization by converting the object into an XML element.

Object deserialize(XMLElement xmlElement)
      This function performs the XML deserialization by converting the XML element into an object.

Object deserialize(XMLElement xmlElement, Object object)
      This function performs the XML deserialization by converting the XML element into the specified object.

Class *DefaultXMLSerializer*
Object
  |
  +--DefaultXMLSerializer

All Implemented Interfaces: XMLSerializer

public class DefaultXMLSerializer extends Object implements XMLSerializer
A class that performs XML serialization and deserialization of arbitrary Java objects.

Constructor Summary
DefaultXMLSerializer()
      Construct the default XML serializer and deserializer

Method Summary
XMLElement serialize(Object object)
      This function performs the XML serialization by converting the object into an XML element.

Object deserialize(XMLElement xmlElement)
      This function performs the XML deserialization by converting the XML element into an object.

Object deserialize(XMLElement xmlElement, Object object)
      This function performs the XML deserialization by converting the XML element into the specified object.

void updateClassNames(SerializedObject serialObject)
      This function is called before an object is deserialized to update class names that have been changed.

Class SerializedObject
Object
  |
  +--SerializedObject

All Implemented Interfaces: java.lang.Cloneable

Direct Known Subclasses: ArrayObject, PrimitiveObject, SpecialObject, UserClass, UserObject

public abstract class SerializedObject extends Object implements java.lang.Cloneable
A class that represents a serialized object. This class is also responsible for serializing and deserializing objects into an XML stream.

Field Summary
static String   METHOD_CONSTRUCT

static String   METHOD_CUSTOM

static String   METHOD_JAVA

static String   METHOD_REFLECT

static String   METHOD_VERSION

static int	TYPE_ARRAY
static int	TYPE_PRIMITIVE
static int	TYPE_SPECIAL_OBJECT
static int	TYPE_USER_CLASS
static int	TYPE_USER_OBJECT

Method Summary

protected static SerializedObject createInstance(XMLElement xmlElement)
> Creates a serialized object that represents the XML element.

protected static XMLElement serialize(String name, Object object, int objectRef[ ], Hashtable objectList)
> Performs the serialization by recursively creating the XML elements represented by the object.

abstract Object deserialize(Object serialHandle, Object object)
> Performs the deserialization by recursively creating and initializing the objects represented by the serialized object.

Object deserialize(Object serialHandle)
> Performs the deserialization by recursively creating and initializing the objects represented by the serialized object.

String getClassName()
> Returns the class name.

String getName()
> Returns the name.

SerializedObject getParent()
> Returns the parent.

String getReference()
> Returns the reference.

int getType()
> Returns the type.

String getValue()
        Returns the value.

boolean isNull()
        Indicates whether the object is null.

void changeClassName(String oldClassName, String newClassName, boolean updateChildren)
        Replaces all occurrences of the old class name with the new class name.

Class ArrayObject
Object
 |
  +--SerializedObject
     |
        +--ArrayObject

All Implemented Interfaces: java.lang.Cloneable

public class ArrayObject extends SerializedObject
A class that represents a serialized array object.

Method Summary
protected static XMLElement serialize(String name, Object object, int objectRef[ ], Hashtable
objectList)
        Performs the serialization by recursively creating the XML elements represented by the
object.

Object deserialize(Object serialHandle, Object object)
        Performs the deserialization by recursively creating and initializing the objects represented
by the serialized object.

boolean containsArray()
        Indicates whether the array contains sub-array elements.

boolean containsPrimitive()
        Indicates whether the array contains primitive elements.

int getArrayCount()
        Returns the number of array entries.

SerializedObject getArrayEntry(int index)
        Returns the specified array entry.

int getArrayLength()
        Returns the array length.

SerializedObject[ ] getArrayList()
        Returns the entire array list.

Class PrimitiveObject
Object
```
 |
 +--SerializedObject
    |
       +--PrimitiveObject
```

All Implemented Interfaces: java.lang.Cloneable

public class PrimitiveObject extends SerializedObject
A class that represents a serialized primitive object.

Method Summary
protected static XMLElement serialize(String name, Object object, int objectRef[ ], Hashtable objectList)
        Performs the serialization by recursively creating the XML elements represented by the object.

Object deserialize(Object serialHandle, Object object)
        Performs the deserialization by recursively creating and initializing the objects represented by the serialized object.

Class SpecialObject
Object
```
 |
 +--SerializedObject
    |
       +--SpecialObject
```

All Implemented Interfaces: java.lang.Cloneable

public class SpecialObject extends SerializedObject
A class that represents a serialized special object.

Supported Java objects:

```
*****************
java.lang.String
java.util.Collection
java.util.Map
java.util.Date
*****************
```

Method Summary

protected static XMLElement serialize(String name, Object object, int objectRef[ ], Hashtable objectList)

      Performs the serialization by recursively creating the XML elements represented by the object.

Object deserialize(Object serialHandle, Object object)

      Performs the deserialization by recursively creating and initializing the objects represented by the serialized object.

String getMethod()

      Returns the serialization method.

SerializedObject getParameter(int index)

      Returns the specified parameter entry.

int getParameterCount()

      Returns the number of parameter entries.

SerializedObject[ ] getParameterList()

      Returns the entire parameter list.

Class UserClass

```
Object
  |
  +--SerializedObject
      |
      +--UserClass
```

All Implemented Interfaces: java.lang.Cloneable

public class UserClass extends SerializedObject
A class that represents a serialized user class.

Method Summary

Object deserialize(Object serialHandle, Object object)
     Since user classes cannot be deserialized directly, an exception is thrown if this method is invoked.

SerializedObject getField(int index)
     Returns the specified field entry.

SerializedObject getField(String name)
     Returns the specified field entry.

int getFieldCount()
     Returns the number of field entries.

SerializedObject[ ] getFieldList()
     Returns the entire field list.

long getSerialVersion()
     Returns the serial version of the class.

boolean isClassDifferent(Object object)
     Indicates whether the class definition differs from the serialized definition.

Class UserObject

Object
  |
  +--SerializedObject
     |
     +--UserObject

All Implemented Interfaces: java.lang.Cloneable

public class UserObject extends SerializedObject
A class that represents a serialized user object.

Method Summary

protected static XMLElement serialize(String name, Object object, int objectRef[ ], Hashtable objectList)
     Performs the serialization by recursively creating the XML elements represented by the object.

Object deserialize(Object serialHandle, Object object)

Performs the deserialization by recursively creating and initializing the objects represented by the serialized object.

void defaultObjectImport(Object serialHandle, Object object)
    Performs the default import of the serialized object into the specified object.

UserClass getClass(java.lang.Class objectClass)
    Returns the specified class entry.

UserClass getClass(int index)
    Returns the specified class entry.

UserClass getClass(String name)
    Returns the specified class entry.

int getClassCount()
    Returns the number of class entries.

UserClass[ ] getClassList()
    Returns the entire class list.

boolean isNull()
    Indicates whether the object is null.

boolean isObjectDifferent(Object object)
    Indicates whether the object definition differs from the serialized definition.

Class XMLObjectInputStream
Object
  |
  +--XMLObjectInputStream

public class XMLObjectInputStream extends Object
A class that reads an XML input stream to deserialize an object from an XML element which represents the object. The object is deserialized using either the default or custom deserializer.

Constructor Summary
XMLObjectInputStream(java.io.InputStream istream)
    Constructs an object for reading an XML input stream using the default XML serializer and deserializer.

XMLObjectInputStream(java.io.InputStream istream, XMLSerializer xmlSerializer)

Constructs an object for reading an XML input stream using a custom XML serializer and deserializer.

Method Summary
void close()
> Closes the XML input stream.

Object readObject()
> Reads an object from the XML input stream.

Object readObject(Object object)
> Reads an object from the XML input stream and imports it into the specified object.

Class *XMLObjectOutputStream*
Object
```
 |
 +--XMLObjectOutputStream
```

public class XMLObjectOutputStream extends Object
A class that writes a serialized object to an XML output stream using an XML element which represents the object. The object is serialized using either the default or custom serializer.

Constructor Summary
XMLObjectOutputStream(java.io.OutputStream ostream)
> Constructs an object for writing an XML output stream using the default XML serializer and deserializer.
XMLObjectOutputStream(java.io.OutputStream ostream, XMLSerializer xmlSerializer)
> Constructs an object for writing an XML output stream using a custom XML serializer and deserializer.

Method Summary
void close()
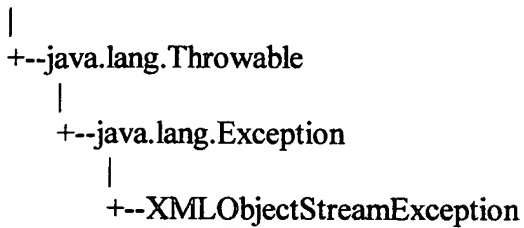> Closes the XML output stream.

void flush()
> Flushes the XML output stream.

void writeObject(Object object)
> Writes an object to the XML output stream.

Class XMLObjectStreamException

Object
  |
 +--java.lang.Throwable
     |
    +--java.lang.Exception
       |
       +--XMLObjectStreamException

public class XMLObjectStreamException extends java.lang.Exception
A class that represents XML object stream exceptions.

Field Summary

static int	ERROR_DESERIALIZE_CLASS
static int	ERROR_GENERAL_EXCEPTION
static int	ERROR_INTERNAL
static int	ERROR_INVALID_SCHEMA_VERSION
static int	ERROR_NOARG_CONSTRUCTOR
static int	ERROR_NOT_SERIALIZABLE
static int	ERROR_SECURITY_MANAGER
static int	ERROR_SERIAL_VERSION
static int	ERROR_STREAM_CORRUPTION
static int	ERROR_UNRECOGNIZED_SCHEMA

Constructor Summary

XMLObjectStreamException(java.lang.Exception excp)
     Constructs an XML object stream exception.

XMLObjectStreamException(int errorCode)
     Constructs an XML object stream exception.

XMLObjectStreamException(int errorCode, String parameter)
     Constructs an XML object stream exception.

Method Summary

java.lang.Exception getEmbeddedException()
        Returns the embedded general exception.

int getErrorCode()
        Returns the exception error code.

String getMessage()
        Returns the exception message.

String getParameter()
        Returns the exception parameter.

Class XMLInputStream

Object
  |
  +--XMLInputStream

public class XMLInputStream extends Object
A class that reads an XML input stream to create an XML element which encapsulates the XML data.

Field Summary

static String ENCODING - Character encoding of input stream.

Constructor Summary

XMLInputStream(java.io.InputStream istream)
        Constructs an object for reading an XML input stream.

Method Summary

void close()
        Closes the XML input stream.

XMLElement readXMLElement()
        Reads an XML element from the input stream, recursively traversing all child elements.

Class XMLOutputStream

Object

```
    |
    +--XMLOutputStream
```

public class XMLOutputStream extends Object
A class that writes an XML output stream using the encapsulated XML data stored in an XML element.

Field Summary
static String ENCODING - Character encoding of output stream.

Constructor Summary
XMLOutputStream(java.io.OutputStream ostream)
        Constructs an object for writing an XML output stream.

Method Summary
void close()
        Closes the XML output stream.

void flush()
        Flushes the XML output stream.

void writeXMLElement(XMLElement xmlElement)
        Writes an XML element to the output stream, recursively traversing all child elements.

Class XMLElement
Object
  |
  +-XMLElement

public class XMLElement
A class that represents an XML element. The W3C DOM specification may be used in place of this implementation.

Constructor Summary
XMLElement(String tagName)
        Constructs an XML element.

Method Summary
void addAttribute(String attrName, boolean attrValue)

void addAttribute(String attrName, byte attrValue)
void addAttribute(String attrName, char attrValue)
void addAttribute(String attrName, double attrValue)
void addAttribute(String attrName, float attrValue)
void addAttribute(String attrName, int attrValue)
void addAttribute(String attrName, long attrValue)
void addAttribute(String attrName, short attrValue)
void addAttribute(String attrName, String attrValue)
      Adds an attribute to the XML element.

void addElement(XMLElement xmlElement)
      Adds a child element to an XML element.

String getAttributeValue(String attrName)
      Returns the attribute value for the specified attribute name.

XMLElement getElement(int index)
      Returns the specified child element.

int getElementCount()
      Returns the number of child elements.

XMLElement[ ] getElementList()
      Returns the entire child element list.

XMLElement getParentElement()
      Returns the parent element.

String getTagBody()
      Returns the XML tag body.

String getTagName()
      Returns the XML tag name.

void setTagBody(String tagBody)
      Sets the XML tag body.

void setTagName(String tagName)
      Sets the XML tag name.